

Minutes of the  
California Dam Safety Triad  
8 December 1999  
Seven Oaks Dam, San Bernardino, California

1. The California Dam Safety Triad was held on 8 December 1999 at the Corps of Engineer's Resident Office at Seven Oaks Dam, San Bernardino, California. The agenda is enclosure 1, list of attendees is enclosure 2.
2. Introductions and welcoming remarks.
  - a. Rusty Postlewait, the new Corps of Engineers South Pacific Division Dam Safety Officer introduced himself and welcomed everyone to the meeting.
  - b. Steve Verigin, Chief Division of Safety of Dams, State of California introduced the DSOD personnel and welcomed everyone.
3. Action items from the June 1999 Triad were reviewed. There were two open items:
  - a. Sacramento District (John Nickell) is to provide a copy of the fuse gate testing report (Compact Disk version) to Don Lopez, Dam Safety Official, State of New Mexico.
  - b. Sacramento District will to provide a letter to the California Reclamation Board on the timing of seismic work at Success Dam. The Chief of Engineers report is was released on 23 December 1999. It addresses the timing of the seismic corrective work, vis-a-vis the new work (increasing capacity). South Pacific Division, Jaime Merino, will work with Sacramento District to ensure that the Reclamation Board is provided a copy for review.
4. Review of Sacramento District projects.
  - a. Success Dam. In addition to the information in 3b above Sacramento District discussed the status of computer modeling and drilling. The Engineering Research and Development Center (formally Waterways Experiment Station) is performing the TARA analysis. Analysis is for a magnitude 8 earthquake at a distance of 45 miles.
  - b. Terminus Dam Fuse Gates. Sacramento District said modeling was completed in July, report in September 1999. (See 3a for action item.) The Decision Document approval is expected in December 1999 and the draft Project Cooperative Agreement in early 2000, with a construction start in June 2000. DSOD, Steve Verigin said that DSOD had performed an analysis which showed the fuse gates would pass the probable maximum flood without tipping, therefore DSOD did not object to the use of the fuse gates.
  - c. Arroyo Pasajero. The state completed studies for geological mapping and Sacramento District can proceed with the Design Memorandum. The Corps believes some seismic issues need to be resolved regarding the fault location and it's impact on the dam. The draft feasibility comment period closed in June 1999 and the final is due in June 2000. Fish and Wildlife Service is involved.
  - d. DaGuerre Point. In November 1999 a group called Friends of the River published a pamphlet suggesting the removal of DaGuerre and Englebright Dams. The local sponsor wants to keep Englebright and no removal studies are underway for that dam. For DaGuerre the fish ladder design is obsolete. Sacramento District is studying the possibility of a new fish ladder or dam removal. Public release of the study is expected in June 2000. DWR would like to see a draft of

the report prior to public release since they have provided some funding for the study. **Action Item:** Sacramento District to provide a draft for the report to DWR prior to public release.

e. **Action Item:** It was agreed that Folsom dam modifications ~~and the Folsom-Newberry project~~ would be added to the next California Triad. At some time in the future a separate triad may be established for these projects but for now they will be included in the California Triad.

5. San Francisco District. No changes were reported on either Warm Springs Dam or Coyote Dam.

6. Los Angeles District

a. Salinas Dam transfer was discussed. Gary Henderson of San Luis Obispo discussed the delay caused by the California Sports Fishing Association. They have requested a hearing before the state board, which will require 6 months to a year to resolve. Until that is resolved the dam cannot be transferred from the federal to the local government. Don Lopez, State of New Mexico Dam Safety Official noted that Las Cruces Dam had been transferred from the federal government and that the transfer process (real estate, environmental, etc) takes longer than the engineering analysis.

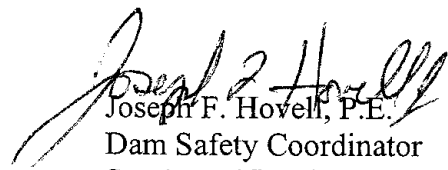
b. Prado Dam. Roodi Roodsari discussed the modifications proposed for Prado Dam. The environmental analysis is due in June 2000. The project cooperative agreement needs to be executed. Funding for design of the embankment is expected in 2001. The spillway was model tested the first week in December 1999. A handout of the plan and profile was provided at the meeting and a complete set of plans was available at the meeting.

c. Seven Oaks Dam. The status of turnover documents was provided by Los Angeles District. DSOD requested that they be provided black line full size documents. The final documents will be electronic and both hard copy and electronic copy will be provided DSOD. Anticipated turnover is May 2000. DSOD said they can accept with an interim operation plan. There are a few punch list items (such as a fail safe mechanism for the gate pin) that Los Angeles District is working. See enclosure 3 for details.

7. There was considerable discussion on gate safety mechanisms and tainter gate inspection. Los Angeles District is working the issue of a fail safe mechanism for the Seven Oaks Dam gate so that the gate will not shear the retaining pin when lowered. (Issue is: the gate is raised and the locking pin is set. As the hydraulic pressure to operate the gate is reduced, the gate lowers slightly and bears directly on the pin. When the operator attempts to lower the gate, the gate must first be raised slightly to retract the pin. If this is not done and the gate is lowered the force is great enough to shear the pin. The indicator light leads the operator to believe the gate can be directly lowered without first raising it to free the pin.) Brian Doyle, Dam Safety Officer, Sacramento District, discussed tainter gates. There will be a federal conference in March 2000 on tainter gates. DSOD has been involved. Presentations have been or will be given at FERC, ICODS and ASDSO. **Action Item:** Agenda for the next Triad will include tainter gate presentations by both the Corps of Engineers and DSOD.

8. The next Triad is scheduled for 21 June at the South Pacific Division Office, 333 Market Street, San Francisco, CA.

9. The attendees then toured Seven Oaks Dam. Construction has been completed and the initial inspection of the intake structure was underway.

  
Joseph F. Hovell, P.E.  
Dam Safety Coordinator  
South Pacific Division

**Agenda**  
**California Dam Safety Triad**  
**0930, 8 December 1999**  
**Seven Oaks Dam, San Bernardino, California.**

9:30 Introductions and Welcoming Remarks

10:00 Review of Minutes and Action Items from the Last Triad (SPD)

(1) Joe Hovell to provide Don Lopez a status of TADS aids. Daniel Rodriguez of the Corps' North Atlantic Division in New York is on the ICOLDS Training Subcommittee. He reports that the different modules were released dated 1988 through 1991 with a Facilitators Guide for Group Training dated 1994. The committee has begun to update the modules on Embankment and Seepage but no completion date is available.

(2) Joe Hovell to provide copies of the minutes of the most recent National Dam Safety Review Board meeting to Don Lopez and Steve Verigin. Done by e-mail 21 June 1999.

(3) Jaime Merino will advise Don Lopez who from Albuquerque District will attend the fuse gate model testing. Done by e-mail 22 June 1999.

(4) Sacramento District will provide a copy of the fuse gate testing reports to Don Lopez.

(5) Sacramento District will provide a letter to the Reclamation Board on the timing of the seismic work at Success Dam

10:30 Sacramento District Projects:

Success Dam – Status and Schedule of Feasibility Study and Seismic Work

Terminus Dam – Project Status and Fuse Gate Presentation

Arroyo Pasajero – Study Status – Results of Recent Explorations

DaGuerre Point Dam

Other Studies with Jurisdictional Structures

11:00 San Francisco District Projects:

Studies with Jurisdictional Structures

11:10 Los Angeles District Projects:

Salinas Dam Update

Prado Dam Update – Status and Schedule

Seven Oaks Dam – Detailed Status and Schedule of Turnover Items

Foundation Report

Embankment Report

As Builts

Operations and Maintenance Manual

*enclosure 1*

Instrumentation  
Water Control Manual  
K- Rat Actions  
Real Estate Actions  
Interim Operation  
Remaining Work

12:00 Lunch

12:30 Next Triad -- Place, Time

12:45 Description of Seven Oaks - Tour

1:00 Seven Oaks Dam Tour

2:30 Adjourn

Jack Farless/24 Nov 1999

*embawa*

California Dam Safety Triad  
8 December 1999  
Attendance Roster

Name	Organization	Phone	Email Address
<b>Division of Safety of Dams</b>			
Steve Verigin	Acting Chief	916-445-7606	sverigin@water.ca.gov
Rick Sanchez	DWR-DSOD	916 322-6206	richs@water.ca.gov
Richard Baines	Field	916 323-5364	rbains@water.ca.gov
David Gutierrez	Design	916 445-3092	daveg@water.ca.gov
<b>Corps of Engineers</b>			
Rusty Postlewater	South Pacific Div.	415 977-8019	cpostlewater@spd.usace.army.mil
Jack Farless	South Pacific Div.	415 977-8126	jfarless@spd.usace.army.mil
Jaime Merino	South Pacific Div.	415 977-8112	jmerino@spd.usace.army.mil
Joseph Hovell	South Pacific Div.	415 977-8109	jhovell@spd.usace.army.mil
Jonathan Yip	South Pacific Div	415 977-8057	jyip@spd.usace.army.mil
Leon Holden	South Pacific Div	415 977-8663	lholden@spd.usace.army.mil
George Beams	Los Angeles District	213 452-3624	gbeams@spl.usace.army.mil
Mike Vahabzadeh	Los Angeles District	213 452-3613	mvahabzadeh@spl.usace.army.mil
Terence M. King	Los Angeles District	909 794-7704	Terence.M.King@spl01.usace.army.mil
Brian Doyle	Sacramento District	916 557-7623	bdoyle@spk.usace.army.mil
Clark Stanage	Sacramento District	916 557-7197	cstanage@spk.usace.army.mil
John Nickell	Sacramento District	916 557-6614	jnickell@spk.usace.army.mil
<b>Sponsors</b>			
Bruce George	Kaweah Delta WCD	559 747-5601	kaweah@lightspeed.net
Jim Stadler	Kaweah Delta WCD	559 747-5601	kaweah@lightspeed.net
Mike Whitlock	Tulare Co. FCD	559 733-6291	nwhitlock@tulareco.ca.gov
Dick Runge	Orange County	714 834-2968	runder@pfrd.orange.ca.gov
Gary Henderson	City of St. Luis Obispo	805 781-7237	ghenderson@ci.san-luis-obispo.ca.us
David Lovell	SBC Flood Control Dist	909 387-2737	dlovell@pwg.co.san-bernardino.ca.us
Rod Mayer	DWR/Reclamation Bd	916 654-9683	rmayer@water.ca.gov
Ric Benites	Orange County	714 567-6306	benitesr@pfrd.co.orange.ca.us
<b>Guest</b>			
Donald T. Lopez	New Mexico State Eng Off.	505 827-6139	Lopez_Don@seo.state.nm.us.

*enclosure 2*

**Los Angeles District Projects  
California Dam Safety Triad  
8 December 1999**

**I. Project: Salinas Dam**

**Update:** Submitted proposal to review Phase I environmental and engineering reports to City of San Luis Obispo, letter dated 24 November 1999, cost \$77k. City requested permission to obtain concrete core samples from dam for testing. COE to review proposal and grant permission.

**II. Project: Prado Dam**

**Update:** Meeting among SPL, RBF (Design A/E), and consultants was held in LADO on 27 Oct 99 to discuss seismic design of outlet works. Conclusion: Design based on response spectra analysis is appropriate. SPL to schedule meeting with RBF to re-do time history analysis as supportive documentation.

**Status and Schedule:**

Item	Status	Milestone	Schedule
Embankment and Outlet Design & P&S	90% complete	Ready to Advertise	Aug 00
Spillway DDR	20% complete; considering alternative wall designs inc. reinforced earth, gravity, and cantilever.	Complete Draft Report	Jul 00
Highway 71 Dike P&S	60% complete	Ready to Advertise	Apr 00

**III. Project: Seven Oaks Dam**

**Update:**

Dam Safety and Instrumentation Demonstration training completed in Oct 99.  
OCC has completed local sponsor punchlist items except for spillway sill cracks.  
Eng. Div. to respond to issues brought up from local sponsor 11/10/99 inspection.  
OCC completed Con-ops punchlist items.  
Periodic Inspection for Outlet Works scheduled for 7-9 Dec 99.  
Construction Completion Ceremony is on 7 Jan 00.  
Awaiting A/E's estimate for spillway mapping contract. Contract award in Jan 00.  
Expect spillway mapping complete by May 00.  
Draft Concrete report to be sent for review in Feb 00 and made final in Apr 00.  
**See table below for detailed status and schedule of turnover items.**

*enclosure 3*

### Seven Oaks Dam

Item	Status	Milestone	Schedule
Foundation Report	Report is being edited by A/E (Geomatrix, Inc.).	a. Edit complete b. Distribution	Mar 00 May 00
Embankment Report	Report is 90% complete. ED received final QA data to top of dam 2 Dec 99	a. Draft Complete b. Distribute for review & receive comments from sponsor/DSOD c. Final complete d. Distribution	Feb 00 Mar 00  Apr 00 May 00
As-Builts	SPL to receive marked up as-builts for review 8 Dec 99. After marked up as-builts are finalized, SPL and Portland District to do as-builts electronically for the emb. and outlet works, respectively.	a. SPL Review b. Final Marked up As-Builts c. Final Electronic As-Builts	Dec-Jan 00 Feb 00  Apr 00
Operations and Maintenance Manual	Portland District is 70% complete with outlet works portion. SPL is 10% done with embankment.	a. Draft Complete b. Final for Review c. Review Complete	Jan 00 Mar 00 May 00
Instrumentation	Embankment instrumentation: instrument description and evaluation of readings to be written in Emb Report; instrument description, reading instructions, reading and reporting schedule, and manufacturer's manuals to be in O&M manual. Outlet works instrumentation to be written by Portland District and included in O&M manual.		
Water Control Manual	Interim water control manual is written. LAD working out details to provide dam tender this winter to teach San Bernardino dam tender how to physically operate dam.	a. Draft to SPD & sponsor for review b. Final	Dec 99  Nov 00
K Rat Actions	Planning Division is writing Biological Assessment. H&H is providing support per PD comments on draft report, Dec 99.	a. Biological Assessm't	Mar 00

Real Estate Actions	MOU with US Forest Service sent to HQ in approx. 1996 to work out transfer between Fed agencies. COE to outgrant or transfer lands to sponsor.		Need update from PM
Interim Operation	See interim water control manual		
Remaining Work	Items in construction: Hydroseeding - <i>government reset maintenance</i> Consolidation Grouting Minor fencing, cleanup - <i>done</i> MDL Pipeline Extension Retro resident office water supply	a. Contract Award b. Contract Award	Feb 00

# Embankment Criteria and Performance Report Schedule, Seven Oaks Dam, 11/30/99

TASK	Responsible Person	Dec	Jan	Feb	Mar	Apr	May
Oversee and Write Report	Byron						
Record Test Write-up and Data Graphs	Greg						
Instrumentation Write-up	Elmer, Bob						
Embankment Stability input	Chris, Julia						
As-builts and requested topo	OCC						
Plates: Design A	Robert						
Plates: Geotech	Henry, Tom						
Plates: Data Graphs	Julia						
Plates: Instrumentation	Elmer						
Soil Test Summaries	Larry E.						
Soil Test Locations	Larry E.						
Complete Report and Assemble Draft-Final	Byron, Chris, Henry						
Internal Review	Roodsari, King						
Outside Review	Farley, Kwan, Sage						
Independent Technical Review	DSOD, SPD, Sponsors						
Respond to Comments, Finalize, Print Report	Sciandrone, Oneto						
Reproduction	Byron and all						
	IM						

# Concrete Report Schedule, Seven Oaks Dam, 11/30/99

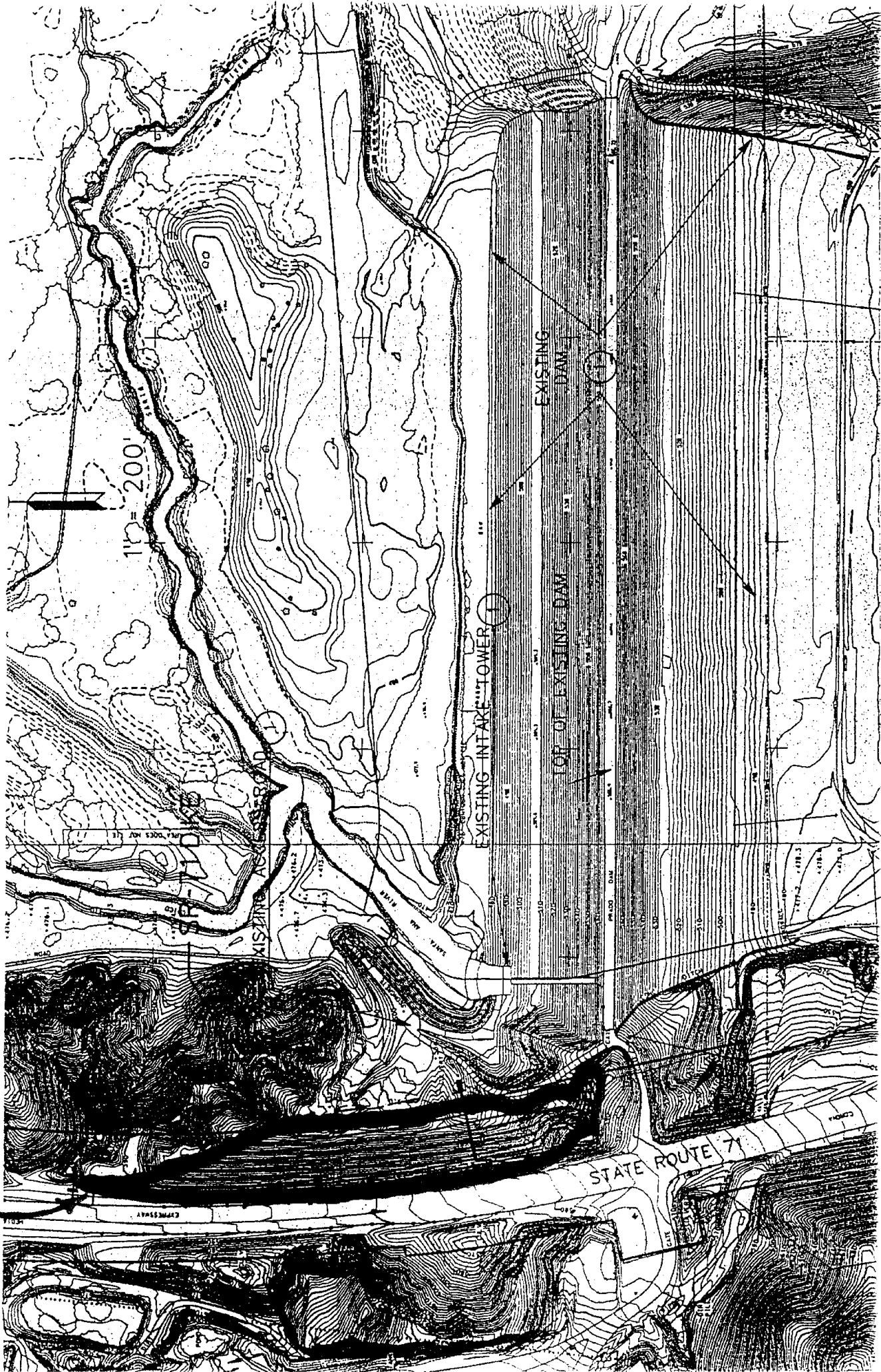
TASK	Responsible Person	Dec	Jan	Feb	Mar	Apr
Complete Data Reduction	Geomatrix Inc.	1	1	1	1	1
Evaluate Data and Write Report		15	15	15	15	15
Plates: Concrete	Bill	1	1	1	1	1
Assemble 90% Draft Report and Distribute	Bill and others (inc. Port. Dist)	1	1	1	1	1
Internal Review	Bill and others	1	1	1	1	1
Outside Review	Roodsari, King, Kwan,	1	1	1	1	1
Independent Technical Review	Sage, Conley, Farley	1	1	1	1	1
	DSOD, SPD, Sponsors	1	1	1	1	1
	Geomatrix Inc.	1	1	1	1	1
	(Hugenberger, retired ORD)	1	1	1	1	1
Respond to Comments and Finalize Report	Bill	1	1	1	1	1
Reproduction	IM	1	1	1	1	1

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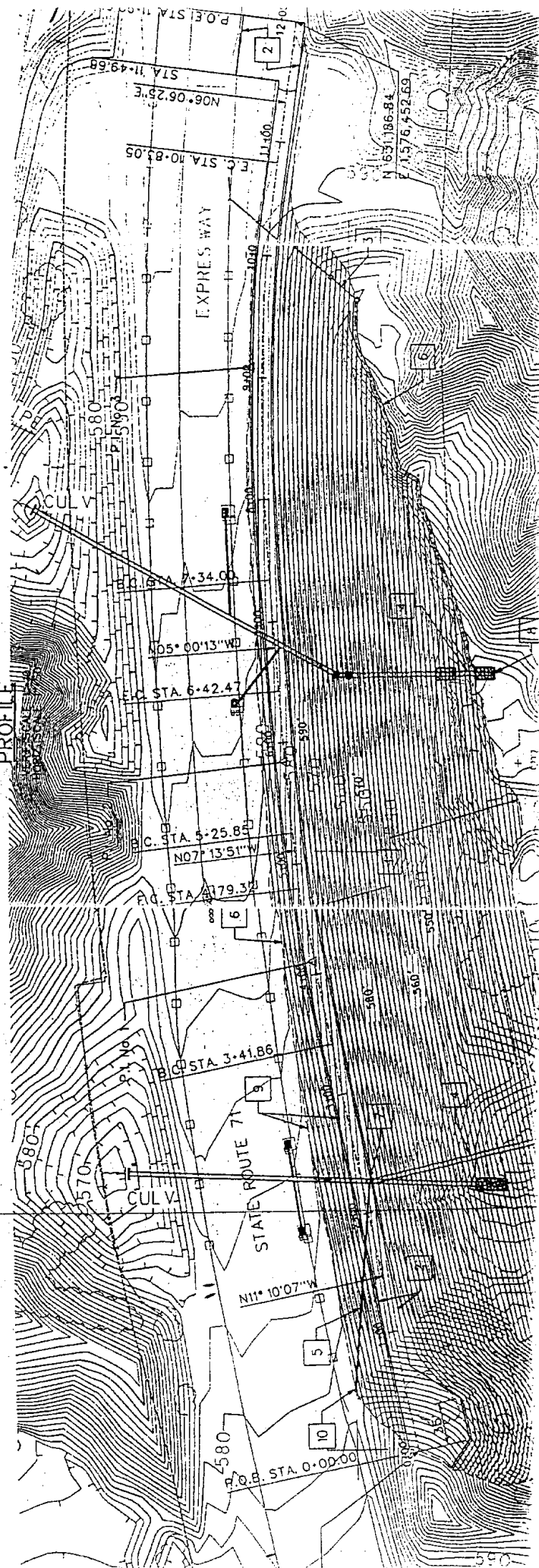
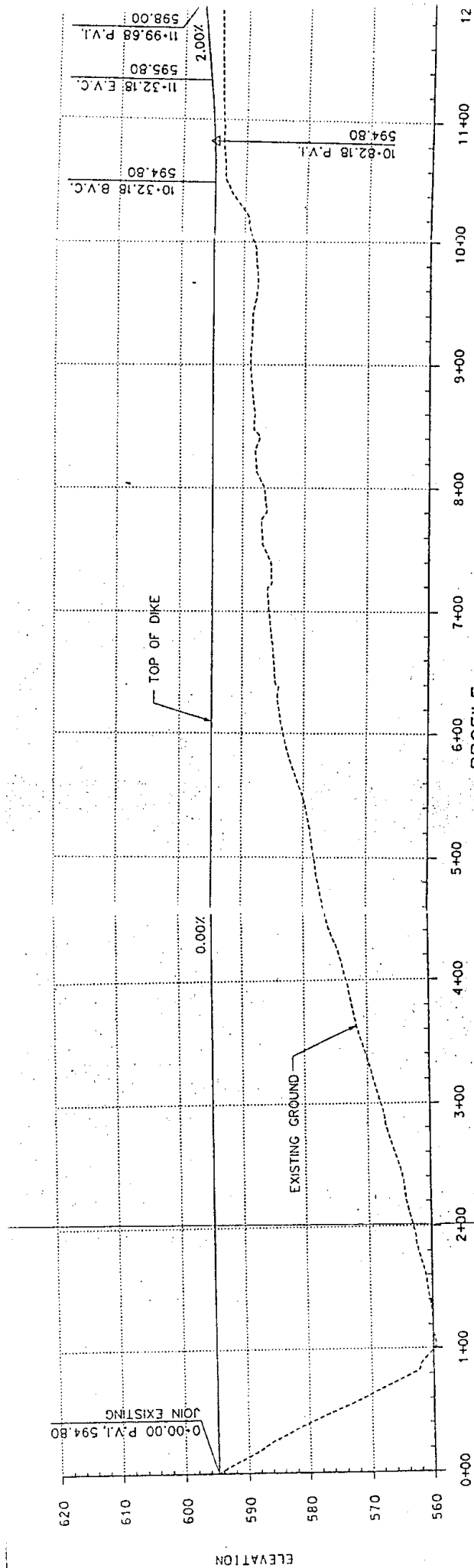
STATE ROUTE 71 DIKE

SITE PLAN

DIKE  
FOOTPRINT

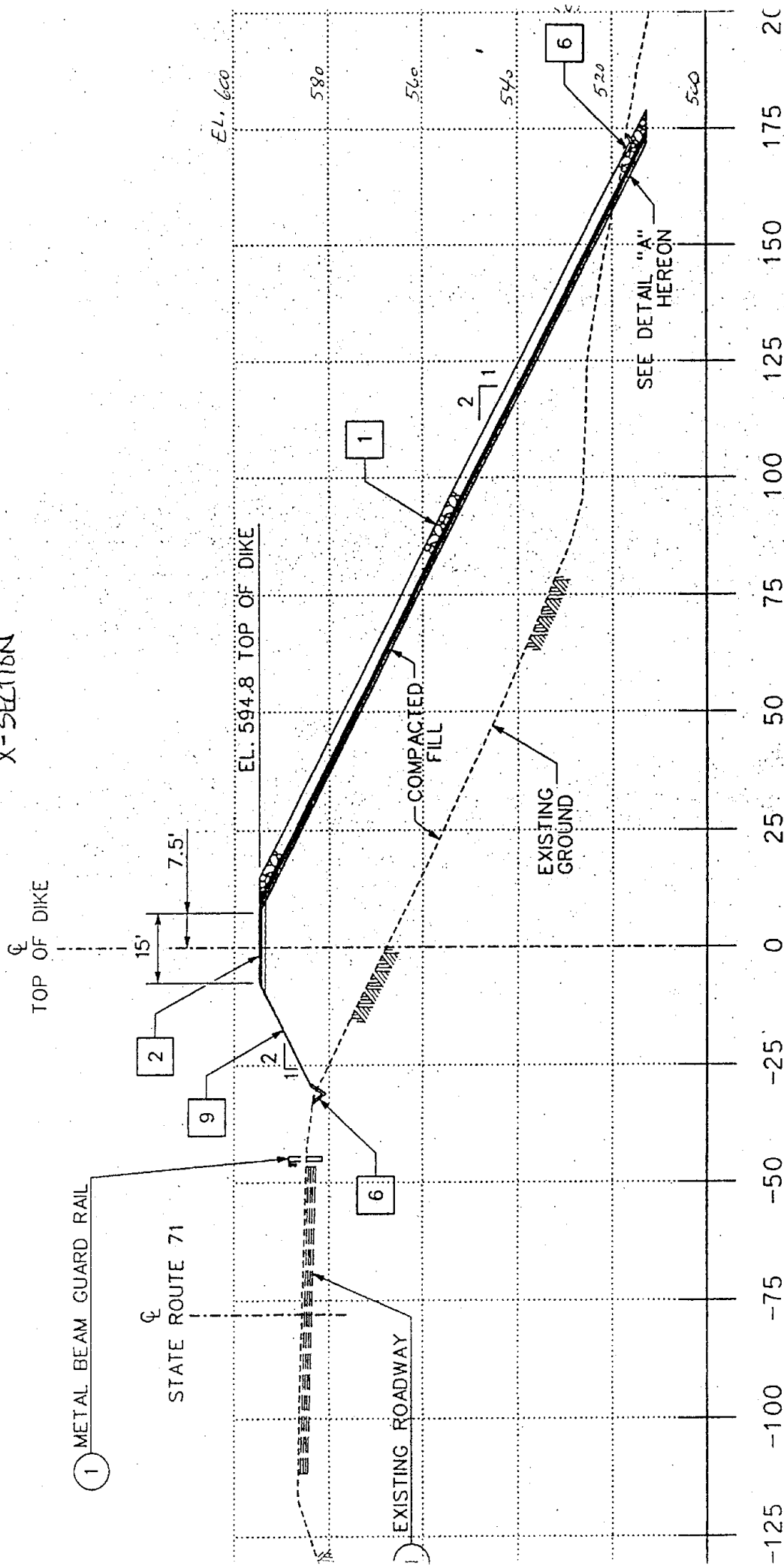


# STATE ROUTE 71 DIKE PLAN AND PROFILE



# STATE ROUTE 71 DIKE

## X-SECTION



## TYPICAL SECTION OF DIKE

STA. 0+72.50 TO STA. 11+49.68

Leifield



DEPARTMENT OF THE ARMY

LOS ANGELES DISTRICT, CORPS OF ENGINEERS

P.O. BOX 532711

LOS ANGELES, CALIFORNIA 90053-2325

October 12, 1999

Office of the Chief  
Environmental Resources Branch

Mr. Ken S. Berg  
Field Supervisor  
U.S. Fish and Wildlife Service  
Carlsbad Field Office  
2730 Loker Avenue West  
Carlsbad, California 92008

Dear Mr. Berg:

As the Seven Oaks Dam embankment contract is nearing completion, we believe it is important to reaffirm our schedule for finalizing the Biological Assessment (BA) on San Bernardino kangaroo rat (SBKR). Finalization of the BA and the resultant Biological Opinion (BO) is predicated upon completion of the on-going engineering and biological studies and on technical discussions we have had during the course of our informal consultation with your office. Our schedule includes associated interim milestone dates where your agency's review of and concurrence with our technical data/analyses is essential in selecting a preferred enhancement alternative that most closely meets the goals of our respective agencies. The following schedule summarizes the major submittal and review dates for the SBKR BA:

TASK/PRODUCT	COMPLETION DATE	RESPONSIBLE AGENCY
Engineering Modeling & Analysis	30 SEP 99	USACE
Selection of Preferred Alternative	07 OCT 99	USACE, USFWS, Local Sponsors
Written Concurrence w/ Preferred Alternative	30 OCT 99	USFWS
Final Draft BA	15 DEC 99	USACE
Review of Final Draft BA	10 JAN 00	USFWS, Local Sponsors
Final BA	31 JAN 00	USACE
Biological Opinion	15 JUL 00	USFWS

In recognizing the potential environmental sensitivities relating to future SBKR habitat suitability and Seven Oaks Dam operation, we would also like to take this opportunity to review our planned interim water management plan ("plan") for the Seven Oaks Dam. This interim plan will be implemented upon physical completion of the embankment and outlet works and will be in effect for the duration of our Section 7 consultation or until an alternate operation plan is developed, agreed to, and implemented as part of the forthcoming BO.

The primary objective of the interim water management plan is to pass as much inflow as physically possible without risking public safety or the dam. The dam will also be operated to meet the downstream water rights release requirements. At times, water will be temporarily stored in order to prevent sediment and/or floating debris from blocking inlets or damaging the outlet works.

*Sediment Pool (2,100 to 2,124 feet NGVD).* At the beginning of each flood season, stop logs will be installed to block the lower inlet ports of the multi-level withdrawal system (MWS) wet well. This wet well leads to the minimum discharge line (MDL). The ports will be blocked up to a point about 20 to 30 feet above the current invert. This is to be done to prevent sediment from entering the intake structure and either blocking or damaging the MDL. While the stop logs are in place, they will form a "dead pool" and no operation will be possible, other than with the leakage. At the end of the flood season, the stop logs will be removed in order to drain any residual pool. Additional stop logs may be installed during the flood season if sediment accumulation is greater than expected. During the year 2000 flood season, the two lowest rows of ports will be blocked. The invert of the next row of ports is at elevation 2,124.24 feet NGVD, so the initial sediment pool will be about 24 feet deep.

*Debris Pool (2,124 to 2,200 feet NGVD).* In the first year of project life, the design documents call for a debris pool up to elevation 2,200 feet NGVD. During normal project operations, this pool will be built using inflows which exceed downstream water rights requirements and will be held until the end of the flood season, when it will be released at a rate consistent with downstream water rights. During the interim, however, this pool will only be built on the rising limb of storm events and will be drained as rapidly as possible once the threat of debris plugging the MWS ports has passed. Generally, this will occur when the storm inflows have receded to near base flow.

*Intermediate Pool Elevations (2,200 to 2,265 feet NGVD).* The intermediate pool elevations occur between the top of the debris pool and the sill of the main intake. During water year 2000, this range is between elevations 2,200 and 2,265 feet NGVD. Within this range, the pool will be evacuated as rapidly as possible. If the storm inflow rate is less than the release of capability, the pool will be drawn down to elevation 2,200 where it will be held until the storm inflow recedes to a rate near base flow. The combined release capability of the low flow gate and the MDL in this range is approximately 400 to 500 cfs.

*Main Trash Rack (2,265 to 2,299 feet NGVD).* The trash racks protecting the main intake are located between elevations 2,265 and 2,292.5 feet. During rising stages at Seven Oaks Dam, there will be no release of water passing through the main wet well when the pool is between elevations 2,265 and 2,299. The reason for this is to avoid drawing floating debris into the trash racks and possibly rendering the main outlets inoperative. During rising stages, releases will be made through the MLS wet well in this elevation range at the maximum safe rate.

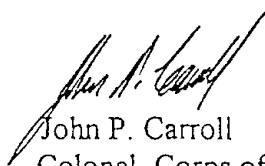
The maximum safe rate will be determined by project experience, but is theoretically on the order of 50 cfs. During falling stages at Seven Oaks, releases will be made in accordance with the project design schedule. These release rates range from 1,000 to 2,000 cfs. If project experience indicates that floating debris is less of a problem than anticipated, the falling pool release rates may be increased.

*Main Pool (2,299 to 2,580 feet NGVD).* This is the pool between elevation 2,299 feet NGVD and the spillway crest at elevation 2,580 feet NGVD. Between these elevations, water will be released at the maximum safe rate. Operational experience will determine this rate, but it is expected to be near the maximum theoretical gate capacity, which is between 6,500 and 8,000 cfs.

*Spillway Surge (2,580 to 2,604 feet NGVD).* Above elevation 2,580, releases are uncontrolled over the spillway. When uncontrolled releases are less than 8,000 cfs, releases from the outlet works will be adjusted so that the total project release equals 8,000 cfs. When uncontrolled releases are greater than 8,000 cfs, no controlled releases will be made.

By transmittal of this letter, we seek your concurrence and support of the Section 7 consultation schedule and the proposed interim water management plan. I would like to thank you in advance for your cooperation and timely response to our request. Should you have any questions regarding the details of the interim water management plan, please feel free to contact Mr. Joseph Evelyn, Chief, Hydrology and Hydraulics Branch, at (213) 452- 3525. Similarly, if you have questions pertaining to the schedule, please do not hesitate to contact Ms. Ruth Villalobos, Chief, Environmental Resources Branch, at (213) 452-3840.

Sincerely,



John P. Carroll  
Colonel, Corps of Engineers  
District Engineer

Copies Furnished:

Mr. Kenneth R. Smith, Deputy Director-Chief Engineer,  
Orange County Public Facilities & Resources Department  
Mr. Ken Miller, Director,  
San Bernardino County Flood Control District  
Mr. Dave Zappe, General Manager-Chief Engineer,  
Riverside County Flood Control & Water Conservation District

